WHAT IS CLAIMED IS:

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1. A fluoropolymer comprising a polymer reaction product of:

a) at least one first alkylene co-monomer containing at least one fluorine atom;

b) optionally at least one monomer selected from 1) at least one second alkylene containing at least one fluorine atom which is different from first alkylene co-monomer; 2) at least one alkyl alkenyl ether containing at least one fluorine atom; 3) at least one aliphatic or cyclic ketone containing at least one fluorinated alpha-alpha position; or 4) non-fluorinated alkene, alkyl vinyl ether, or alkenyl ester; and

c) at least one sterically hindered alkenyl or alkenyl ether organo-silane co-monomer with or without at least one fluorine substituent.

2. The fluoropolymer of claim 1, wherein said reaction product is an free radical polymerization reaction product.

3. The fluoropolymer of claim 1, wherein said at least one ethylene co-monomer is present in an amount of from about 40 mol% to about 99.9 mol%.

4. The fluoropolymer of claim 1, wherein said at least one co-monomer b) is present in an amount of from about 0.1 mol% to about 50 mol%.

5. The fluoropolymer of claim 1, wherein said at least one sterically hindered vinyl organo-silane co-monomer is present in an amount of from about 0.1 mol% to about 50 mol%.

6. The fluoropolymer of claim 1, wherein said at least one sterically hindered vinyl organo-silane co-monomer is the formula:

$$R^2R_n^3\,Si(OR^1)_{3-n} \qquad (I),$$

wherein n is an integer of from 0 to 2, or of the formula

$$R^2[Si(R^3)_k(--OR^1)_{2-k}(O)]_m\,R^3 \qquad (II),$$

wherein m is an integer of from about 2 to about 1[illegible] is an integer of from 0 to 1; and R^1 represents at least one branched alkyl, cycloalkyl [illegible]terocyclic group with or without at least one fluorine substituent; R^2 represents at least one alkenyl or allyl containing group; R^3 represents at least one n-alkyl, branched alkyl, cycloalkyl, or heterocyclic group.

7. The fluoropolymer of claim 6, wherein said R^3 further comprises at least one functional group.

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8. The fluoropolymer of claim 7, wherein said at least one functional group is at least one halogen, hydroxyl, nitrogen, amino, epoxy, carboxylic salt, ester, sulfur, oxygen, cyano, urea, amide, oxo, or combinations thereof.

9. The fluoropolymer of claim 1, wherein said fluoropolymer is cross-linkable.

10. The fluoropolymer of claim 7, wherein said fluoropolymer is cross-linkable.

11. The fluoropolymer of claim 1, wherein said fluoropolymer further comprises at least one metal oxide, silane, or siloxane, or combinations thereof.

12. The fluoropolymer of claim 11, wherein said at least one metal oxide, silane, or siloxane is reacted with a silane of said fluoropolymer.

13. A method of making the fluoropolymer of claim 1, comprising conducting a polymerization in a buffered system of:

a) at least one first alkylene co-monomer containing at least one fluorine atom;

b) optionally at least one monomer selected from 1) at least one second alkylene containing at least one fluorine atom which is different from first alkylene co-monomer; 2) at least one alkyl alkenyl ether containing at least one fluorine atom; 3) at least one aliphatic or cyclic ketone containing at least one fluorinated alpha-alpha position; or 4) non-fluorinated alkene, alkyl alkenyl ether, or vinyl alkenyl; and

c) at least one sterically hindered alkenyl or alkenyl ether organo-silane co-monomer with or without at least one fluorine substituent for a sufficient time and at a sufficient pressure and temperature to form said fluoropolymer.

14. The method of claim 13, wherein said polymerization is a free radical polymerization.

15. The method of claim 13, wherein said polymerization is an emulsion polymerization.

16. The method of claim 13, wherein said polymerization is in an aqueous

17. The method of claim 13, wherein said polymerization occurs at a pH range of from about 4.5 to about 8.5.

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18. The method of claim 13, further comprising initially charging deionized water; di-sodium phosphate, tri-sodium phosphate, or both; and at least one fluoronated surfactant into a reactor and deoxygenating before introducing the co-monomers a), optionally b), and c).

19. The method of claim 18, further comprising introducing an initiator emulsion and vinyl silane solution in a solvent to start a reaction after said initially charging step.

20. The method of claim 17, further comprising continually feeding said co-monomers a), optionally b), and c) into said reactor after said reaction begins.

21. The method of claim 18, further comprising isolating said fluoropolymer.

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